

US EPA ARCHIVE DOCUMENT

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MEMORANDUM

SUBJECT: Review of Request for Emergency Exemption for Use of Sulfentrazone on Sunflowers to Control Kochia (99KS04)

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We have reviewed the request from Kansas for an emergency exemption to use sulfentrazone (Spartan®) for 80,000 acres of sunflowers to control kochia (*Kochia scoparia*). This is the first year that BEAD has reviewed this request. Similar requests from Colorado, Minnesota, North Dakota, Nebraska and Wyoming (99-CO-01, 99-MN-21, 99-ND-17, 99-NE-04, and 99-WY-04) were also received.

The situation as described meets agronomic criteria for an urgent and possibly non-routine condition in no-till and low-till sunflowers because an adequate alternative is not available. The situation does not meet the economic criteria for significant economic loss because it appears to be directed toward revenue enhancement and/or expansion of viable sunflower acreage.

Agronomic Considerations

The request is based on the following factors: 1. Sulfentrazone provides excellent control of kochia as well as other broadleaf weeds, and 2. Sulfentrazone is more effective than pendamethalin (Prowl®), the registered alternative, for low-till and no-till sunflowers under low moisture conditions.

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CONCURRENCES							
SYMBOL	7503C	7503C	7503C	BEAD	7503C		
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DATE	May 7, 99	5/7/99	5/7/99	5/7/99	5/7/99		

Reduced tillage sunflowers will account for at least 100,000 of the 260,000 acres of sunflowers projected to be grown in Kansas this year¹. Reduced tillage is used predominately in Western Kansas (west of Highway 283) where a crop year is alternated with a fallow year to preserve limited moisture. Use of reduced tillage in the crop year further conserves limited moisture. Control of kochia with pendimethalin is inconsistent under these conditions; with adequate moisture fair control of kochia can be obtained. However, under low moisture, which is common in this geographical area, control with pendimethalin is unacceptable (about 30%)².

Economic Considerations

The situation of kochia infested sunflower in Kansas was determined to not result in significant economic loss for a Section 18 exemption. This finding was based on several linked criteria:

1. The kochia situation in Kansas sunflower is routine. Similar to the situations in North Dakota, Nebraska, Colorado, Minnesota, and Wyoming (all of which have applied for Section 18 exemptions for sulfentrazone in sunflower), kochia has been endemic to the sunflower production system for many years. The exemption application (page 6) states:

"Sunflower grower surveys conducted in 1990, 1991, 1992, 1994, and 1997 show that broadleaf weeds are a major problem in sunflower production in Kansas, Minnesota, North Dakota, and South Dakota. Kochia was, by far, the worst weed problem in the dry years of 1990 and 1991, the third worst weed problem in 1992, the sixth and fourth worst weed problems even in the wetter years of 1994 and 1997, respectively...Despite the use of available chemical and mechanical control methods, kochia and other weeds continues [sic] to a [sic] major deterrent to sunflower production."

Although kochia and other broadleaf weeds seem to be a major constraint to profitability in sunflower production, kochia has been a chronic weed in sunflower since the late 1980s, and has clearly been a continuing aspect of sunflower production. Economic losses result when current yields (*without sulfentrazone*) are expected to be less than historic yields (*without sulfentrazone*). But, there appears to be little, if any change, in the weed problem other than an undocumented reference to herbicide resistant kochia. Since there is no documented difference between the historical and expected current kochia pressure in sunflower, the situation must be considered routine with respect to significant economic loss under Section 18.

2. Acreage expansion and change in cropping system do not support economic losses. Economic losses, for Section 18 exemptions, would need to be based on production impacts on current sunflower production acres. Increasing the profitability of no-till or conventional sunflower production to enhance current revenues, or support conversion to no-till production, is not a basis for claiming a Section 18 significant economic loss. However, these appear to underlie the exemption request:

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"Lack of registered herbicides for broadleaf weed control in no-till and conventional till sunflower production systems *limits expansion of sunflower acreage* in the U.S." [page 6, italics added]

"Farmers who produce sunflower in Kansas and other states are *switching to production systems* utilizing a minimum of tillage." [attachment A1, italics added]

3. Revenue enhancement, or lack thereof, does not qualify as economic loss.

Although the application argues convincingly that kochia can substantially reduce sunflower yields, sulfentrazone use in sunflowers appears to be intended to enhance established revenue patterns by replacing less effective herbicides. As such, these do not qualify as economic losses under routine, albeit yield limiting, conditions. The application states that:

"We feel that once sunflowers get a herbicide labeled for the control of broadleaf weeds, *farmers will increase their income.*" [attachment A2, italics added]

"I conclude that sulfentrazone offers sunflower growers *improved control of small-seeded broadleaf weeds and increased flexibility in application timing compared to PROWL*, the current standard, with little or no more risk of crop injury."² [attachment B, italics added]

"Sulfentrazone will *increase the producers [sic] ability to produce sunflower* in fields that have broadleaf weed problems and maybe more importantly in notill or reduced till situations. Sulfentrazone will *provide more consistent weed control than any of the current herbicides* registered in sunflower."¹ [attachment C, italics added]

4. General adverse economic conditions may be linked to sunflower overproduction rather than yield losses. The application notes (page 9) that the price of sunflowers can vary considerably from year to year, causing "Boom or Bust" years. As noted in the analysis of North Dakota's similar request for sulfentrazone on sunflower (barcode: 291272; ID#:99ND0017), the low prices currently causing hardship on sunflower growers probably result from the record yields in 1998.

Conclusion. BEAD recommends that RD consider both agronomic and economic aspects in deciding whether to grant Kansas the emergency exemption for the use of sulfentrazone on sunflowers to control kochia in reduced tillage areas.

¹ Curtis Thompson, Kansas State Agricultural Research Center.

² Dr. Phil Stallman, Associate Professor, Crops and Soils Specialist, Kansas State Agricultural Research Center, Fort Hays.